

REMARKS

Claims 50 and 53 have been amended in response to the objections set forth on page 2 of the outstanding Office Action. Independent composite claim 1, line 7, and independent method claim 32, line 11, have been amended by deletion of the term "substantially" therefrom to make it clear that there is no oxygen storage component in the second layer.

The claims stand rejected under 35 U.S.C. 102(b) as being anticipated by Abe et al., US 5,459,119. The claims also stand rejected under 35 U.S.C. 103(a) as being unpatentable over the '119 patent. These rejections are respectfully traversed for the reasons presented below. For the sake of brevity, the rejections in Paragraphs 4, 5 and 7 of the outstanding Office Action will be treated as a single rejection of all of the claims over the '119 patent. Further, for the sake of brevity, the remarks set forth below will focus on the patentable differences between independent composite claim 1 and independent method claim 32 and the disclosure of the '119 patent. Applicants' attorney respectfully submits that if independent claims 1 and 32 can be shown to be patentable over the disclosure of the '119 patent, it is not necessary to discuss the patentable differences between the dependent claims and the disclosure of the '119 patent.

As may be seen from the language in claims 1 and 32, there are several critical aspects of the present invention:

First, the layered catalyst composite contains three layers, the bottom layer of which is deposited on a carrier.

Second, the second layer, i.e., the middle layer, of the catalyst composite, must contain no oxygen storage component. Therefore, the palladium and/or platinum present in the middle layer must contain no oxygen storage component.

Third, when rhodium is used as a catalytic component, it is present in the third, i.e., the upper, layer.

Fourth, when rhodium is used as a catalytic component, it is never mixed with both palladium and platinum. That is, palladium may be mixed with platinum and such mixture may be present in the second layer, and rhodium may be mixed with platinum and such mixture may be present in the top layer. The composite never uses a mixture of palladium, platinum and rhodium in the same layer.

When the four critical aspects of the invention are compared to the disclosure of the '119 patent, it is clear that the reference neither anticipates nor renders the present invention obvious to one skilled in the art.

The '119 patent is directed to both two-layer composites and three-layer composites. However, it is irrelevant to look at the two-layer composites of the reference. Rather, the three-layer composites of the reference should be compared to the three-layered composites of the present invention. Therefore, for comparative purposes, only Examples 3-8 of the reference should be examined, since the other examples relate to two-layer composites.

Admittedly, Example 11 shown in Table 1 in columns 13 and 14 of the reference does make use of a Pd-Al₂O₃ powder containing no CeO₂ (see column 11, line 53 to column 12, line 7 of the reference). However, such powder is used only in Example 11 which is a two-layer composite. Therefore, Example 11 is irrelevant, since the present invention relates to a three-layer composite. Moreover, Example 11 utilizes 0.7% of a noble metal loaded Pt-Al₂O₃,CeO₂. Thus, even if a comparison is attempted between the second layer of Example 11 of the reference with the second layer of the catalyst composite of the present invention, such comparison would be irrelevant, since the second layer of the present catalyst composite must not contain any oxygen storage component such as CeO₂.

Note that claims 21 and 48 state that one or more promoters comprising one or more non-reducible oxides may be present in the second layer of the present catalyst composite. However, such promoters cannot be considered to be oxygen storage components, since an oxygen storage component must of necessity be a reducible oxide.

Nowhere does the cited reference state that there must be no oxygen storage component present in the second layer of a three-layer catalyst composite. Indeed, in Examples 3-8 of the reference, the oxygen storage component is present in both the first and the second layers in the form of Pd-Al₂O₃,CeO₂ and/or Pt-Al₂O₃,CeO₂.

In the examples of the cited reference, the top layer of a two- or three-layered composite comprises ruthenium containing no oxygen storage component such as CeO₂. Indeed, the reference states that the oxygen storage component should not be present in conjunction with ruthenium "... because the properties of Rh are impaired in the coexistence of CeO₂" (col.2, l. 33-33).

In contradistinction thereto, in the top layer the present catalyst composite, when Rh is used as the catalyst component, an oxygen storage component such as CeO₂ is deliberately present.

Finally, it should be noted that much of the disclosure of the '119 patent deals with the use of a catalyst layer of a Rh/Pd/Pt mixed phase (see, e.g., column 8, lines 36-42; column 9, lines 26-27. Such teaching is opposite to the concept of the present invention wherein none of the layers of the three-layered catalyst composite contain a mixture of all three catalytic components.

It is respectfully submitted that the '119 patent neither anticipates nor renders the claims, as amended, unpatentable. Accordingly, it is respectfully requested that this application be re-examined and passed to issue on the basis of the amendment and remarks set forth above. If the Examiner wishes to further discuss this case with the undersigned attorney, he may be reached at (973) 467-5626.

Respectfully submitted,

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